ATTACHMENT (1)

MARKED-UP VERSION

METHOD ~~FOR~~ OF SETTING SUBSTITUTE RINGBACK TONE IN A COMMUNICATION TERMINAL ~~OF CALLING PARTY~~ IN MOBILE COMMUNICATIONS SYSTEM

~~TECHNICAL FIELD~~BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates to a call setup process in a communications network and, more particularly, to a method ~~for~~ of setting up a calling party's (i.e., "a caller's") substitute ringback tone during a call set up process ~~which is provided to a calling party~~ until athe called party (i.e., "the receiver") responds to athe call ~~during a call setup process~~ from the caller.

~~BACKGROUND ART~~Description of the Prior Art

[0002] When a calling party (i.e., "a caller")~~ing subscriber~~ originates a call in a communications network to a called party (i.e., "a receiver"), a terminating switch or a network to which the receiver's communication terminal (e.g., a mobile telephone) is connected to may provides a traditional-type of ringback tone to the caller until ~~a called subscriber~~ the receiver responds to the call. A typical traditional ringback tone resembles, for example,~~Recently, a substitute ringback tone service providing substitute tone designated by the phone user instead of uniform ringback tone having~~ a monotone sound that turns on and off at a fixed frequency, which is generally perceived as being unpleasant or annoying to the caller or any listener hearing the tone ~~and a fixed intermission period became increasingly popular with the phone users~~. Recently,

however, a substitute ringback tone service is gaining popularity, as the service allows a substituted ringback tone designated by a receiver (who is also a subscriber of the substitute ringback tone service) instead of an annoying tone to be played out to the caller until the connection is made between the caller and the receiver.

[0003] Some ~~M~~methods~~s for~~ of providing ~~the~~a substitute ringback tone are disclosed, for example, in Korean Patent No. 292089 issued 20 Mar~~-~~ch 2001, ~~and~~ entitled METHOD AND APPARATUS FOR GENERATING SUBSTITUTE RINGBACK TONE DESIGNATED BY CALLED PARTY IN TERMINATING SWITCH IN COMMUNICATIONS NETWORK, and Korean Laid-open Patent 2002-56833 published 10 Jul~~-~~y 2002 and entitled METHOD AND APPARATUS FOR PROVIDED SUBSCRIBER-BASED SUBSTITUTE RINGBACK TONE.

[0004] According to ~~such~~ the services disclosed by these references, ~~the user can~~ a receiver (who is also a subscriber of a substitute ringback tone service) is allowed to select and set ~~his or her~~the receiver's own substitute ringback tone, so that the switch would produce the sounds of the substitute ringback tone set by the receiver (instead of the traditional ringback tone) to the caller while the ~~, when a~~ call connection is being set up ~~terminating to the user is generated~~(i.e., until ~~when a~~the call setup process is ~~done~~completed) between the caller and the receiver~~, the switch reproduces the substitute ringback tone instead of the ringback tone to provide to the caller until the user responds to the call~~. ~~The~~A substitute ringback tone~~, which~~ may ~~be~~ include a musical melody, a specific sound, a sound effect, or an advertisement message, among others, that may enables the ~~user~~call receivers (that is, the subscribers) to emphasize their personalities~~y and reduce uniformity and monotony~~ through sounds of the

substitute ringback tones being played out to the callers. ~~Also, a called party can~~ caller would also be able to identify whether a call has been correctly placed to the intended receiver even before the receiver responds to the call just by hearing ~~an erroneous connection based on~~ the personalized substitute ringback tone ~~even before the response of the called party~~ that characterizes the receiver.

[0005] ~~Conventionally, however, when a calling party feels like selecting the~~ Then, situations may arise in which a caller hearing a substitute ringback tone of the ~~called party~~receiver also desires to adopt that same substitute ringback tone of the receiver to be the caller's own. However, it is rather difficult for ~~for his or her own substitute tone while hearing the~~a caller to set his own substitute ringback tone to be the same asa the receiver's substitute ringback tone ~~of the called party, it is difficult for the caller to set the substitute ringback tone to be identical with that of the called party~~. This~~at~~ is because a caller~~, the user~~ who wishes to change the caller's ~~the~~ substitute ringback tone to be~~into~~ ~~that~~the same as ~~of~~ the receiver's substitute ringback tone that ~~called party~~the caller heard while placing a call to the receiver, has to search for the heard substitute ringback tone ~~from~~in ~~the~~a content server ~~of the contents provider~~ through the Internet~~,~~ (the WAP-based wireless Internet~~,~~ or the ARS system)~~. , which may cause the user to consume~~ This search requires much effort on the part of the caller that may result in wasted time and expenses~~, and, ~~~~In~~ particular, the searching burden worsens when there are multiple~~when a plurality of~~ contents providers providing~~e the~~ similar services~~, the burden of searching is worsen~~.

~~DISCLOSURE~~ SUMMARY OF THE INVENTION

[0006] To solve the above and other problems, ~~one object of~~ the present invention ~~is to~~ provides a method of setting substitute ringback tone which enables a ~~calling party~~caller to set his/her substitute ringback tone to be identical ~~with~~ to that of a ~~called party~~receiver's substitute ringback tone while the caller is hearing the substitute ringback tone of the ~~called party~~receiver when placing a call to the receiver.

[0007] ~~Another object of~~In addition, the present invention ~~is to~~ provides a method of setting a substitute ringback tone which enables a ~~calling party~~caller to set ~~his/her~~the caller's substitute ringback tone to be identical ~~with~~to that of a ~~called party~~receiver even after completing a call and confirming the change of the tone.

[0008] ~~Yet another object of~~Further, the present invention ~~is to~~ provides a method of setting substitute ringback tone which enables a ~~calling party~~caller to set ~~his/her~~the caller's substitute ringback tone to be identical ~~with~~to that of another ~~user~~ subscriber by accessing a server through a communications network at any time after the completion of a call.

[0009] Still ~~yet another object of~~further, the present invention ~~is to~~ provides a method of setting a substitute ringback tone which enables a ~~user~~subscriber to access a server through a communications network to present a substitute ringback tone to a ~~third party~~receiver, so that the substitute ringback tone of the ~~third party~~receiver is changed after the confirmation of the third party.

[0010] ~~The~~A method of setting the substitute ringback tone for achieving the above ~~objects~~ and others solved by the present invention is implemented in a system connected to a mobile switching center to provide a substitute ringback tone to a caller terminal when the mobile switching center suspends(sets up) a call to a called terminal

and requests a service by providing an identification code of the called terminal. The system includes a play control server for storing substitute ringback tone information set for each service subscriber, and a play server for storing various substitute ringback tones and reproducing and providing one of the various substitute ringback tones in response to the request ~~of~~ from the mobile switching center, ~~and~~ The ringback tone is selected based on the setting information stored in the play control server.

[0011] According to an aspect of the present invention, when the system receives a call(information), which ~~including~~ includes the identification code of the called terminal, from the mobile switching center, the system identifies a tone code for the called terminal from the play control server, ~~and~~ reproduces the substitute ringback tone having an identified tone code, and ~~to~~ provides the substitute ringback tone to the caller terminal. When a predetermined key input is received from the caller terminal during the reproduction, the system checks the identification code of the caller terminal and the tone code for the called terminal, ~~and~~ The system stores the identification code and the tone code in the play control server, ~~so~~ such that the substitute ringback tone of the caller terminal is set to be identical with the substitute ringback tone of the called terminal. After the completion of the change, the system preferably sends a short message to the caller terminal for notifying change of the substitute ringback tone.

[0012] In ~~the~~ a case ~~that~~ where the system provides the substitute ringback tone service only for service subscribers, it is preferable that the system carries out the process of changing the tone after determining whether the caller terminal ~~is~~ has subscribed to the service ~~whenever receiving the predetermined key input~~. When the caller terminal has not subscribed to the service, ~~it~~ is preferable that the system sends

a short message to the caller terminal ~~for~~ advising of a required~~the~~ subscription of the service ~~when the caller terminal is not subscribed to the service~~.

[0013] According to another aspect of the present invention, the system sends a short message to the caller terminal ~~for~~ inviting the caller terminal to connect to the system when the predetermined key input is received from the caller terminal., ~~and~~ The system changes the tone of the caller terminal only when the caller confirms the change.

[0014] According to yet another aspect of the present invention, the system ~~enables~~ allows a user to change his or her substitute ringback tone to be identical ~~with~~ to that of another user by accessing a server at any time. First, the system receives a target phone number ~~of a third party~~ from the ~~user~~ caller terminal through a communications network and identifies the substitute ringback tone of the ~~third party~~target phone number from the play control server. Subsequently, the system changes the substitute ringback tone of the ~~user~~ caller terminal by storing the phone number of the ~~user~~ caller terminal and the tone code ~~for the third party~~of the target phone number in the play control server after receiving the confirmation of the user. In the case that the system provides the substitute ringback tone service only for service subscribers, it is preferable that the system carries out the process of changing the tone after determining whether the caller terminal ~~is~~ has subscribed to the service.

[0015] According to still yet another aspect of the present invention, a ~~user~~ caller terminal can present a substitute ringback tone to a ~~third party~~recipient. The system makes ~~a user~~ the caller terminal ~~to~~ select ~~a~~ the phone number of the ~~third party~~recipient and the substitute ringback tone to be presented to the ~~third party~~recipient. Then, the

system sends a short message to the ~~third-party~~ recipient ~~for~~ inviting the ~~third-party~~ recipient to connect to the system. When the ~~third-party~~ recipient is connected to the system, the system receives a confirmation for change of the substitute ringback tone of the ~~third-party~~ recipient and changes the tone by storing the identification code of the ~~third-party~~ recipient and the ~~selected~~ presented tone code in the play control server.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] The above and other objectives and advantages of the present invention will become more apparent by describing in detail preferred embodiments thereof with reference to the attached drawings in which:

[0017] FIG. 1 illustrates an embodiment of a mobile communications system for implementing the method of setting substitute ringback tone of the present invention;

[0018] FIG. 2 is a flowchart showing a first embodiment of the method of setting substitute ringback tone of the present invention;

[0019] FIG. 3 is a flowchart showing a second embodiment of the method of setting substitute ringback tone of the present invention;

[0020] FIG. 4 is a flowchart showing a third embodiment of the method of setting substitute ringback tone of the present invention; and

[0021] FIG. 5 is a flowchart showing a fourth embodiment of the method of setting substitute ringback tone of the present invention.

DESCRIPTION OF SPECIFIC EMBODIMENTS

[0022] ~~Referring to~~ FIG. 1, ~~in~~shows a mobile communications system for

implementing ~~the~~a method of setting a substitute ringback tone ~~of~~according to an embodiment of ~~the~~ present invention, ~~, a~~An originating switch (O_MSC) 10 and a terminating switch (T_MSC) 20 are connected to each other. The originating switch 10 and the terminating switch 20 are also, ~~and~~ connected ~~also~~ to ~~respective~~ Home Location Registers (HLR) 12 and 22, respectively. ~~The~~Each HLR 12 or 22 is a register ~~having a~~which functions ~~of~~ as an intra-network database and maintains the information ~~of~~related to the subscribers and the positions of the subscriber terminals (e.g., the subscriber's telephones) as these are well known in the art. Even though FIG. 1 shows that each of the originating switch 10 and the terminating switch 20 is connected to the respective one of the HLRs 12 and 22~~in FIG. 1~~, it should be readily understood that a single HLR may adequately provide the services to both ~~of the~~ switches 10 and 20. Also, it should be ~~noted~~ readily understood that the roles of the switches 10 and 20 may be ~~ex~~interchanged depending on the call setup process, and a single physical switch ~~can~~may carry out the roles ~~of~~performed by the two switches 10 and 20 when a calling party (i.e., "a caller") operably connected to the originating switch 10 and a called party (i.e., "a receiver") operably connected to the terminating switch 20 ~~is~~are both located in the same service area of the single switch.

[0023] When a caller using his communication terminal, such as a mobile telephone connected to an originating switch 10, in ~~its~~a service area performs a call registration, the originating switch 10 registers the position information of the caller's communication terminal in the HLR 12. The terminating switch 20 stores, in its Visitors Locations Register (VLR), the receiver's service subscription information of the receiver's communication terminal that is located in its service area and the routing

information for routing a call to the substitute ringback tone play server 30. The terminating switch 20 , and provides the substitute ringback tone service (assuming that the user is a subscriber of the service) whenever a call from a caller terminating to the terminal terminating switch 20 is generated as described below.

[0024] ——— TheA play server 30 is connected to the terminating switch 20. The play server 30 is equipped with various substitute ringback tone files in the sound database (DB) 32. When a call is set up betweenplaced from the originating switch 10 to the terminating switch 20-and connected to the play server 30 for the substitute ringback tone service, the play server 30 queries the play control server 40 for the sound substitute ringback tone informationcode of the ringback tone designated toby the called partyreceiver (assuming that the receiver is a subscriber of the substitute ringback tone service) and then outputs the sound information to the play control server 40. Subsequently, the play server 30 reads out the substitute ringback tone file stored in the sound DB 32 corresponding to the sound substitute ringback tone information code received from the play control server 40 to reproduce and provides the substitute ringback tone to the calling party through the terminating switch 20 to the caller atand the originating switch 10.

[0025] The play control server 40 includes a subscriber substitute ringback tone information code DB 42 for storing the substitute ringback tone informationcodes for each of all service subscribers. The play control server 40 provides the requested substitute ringback tone code corresponding to the requesting subscriber information for a subscriber to the play server 30 in response to athe request of from the play server 30. Further, the play control server 40 may include a Customer-oOriented iInformation

~~s~~System (COIS) 44 for managing the information of the service subscribers~~ information~~. The COIS 44 provides the ~~service subscriber~~ information of ~~a user~~the service subscriber upon receiving a request ~~of~~ from the play control server 40.

[0026] The play control server 40 is connected to a subscriber interface (I/F) server (User I/F Server) 50 ~~for enabling~~to allow a ~~user~~subscriber to request and ~~to~~ change the subscriber's own substitute ringback tone with another tone or to allow a subscriber to provide, for example, as a present a substitute ringback tone to ~~another~~ a third person. The subscriber I/F server 50 includes a WEB service unit 52 for enabling a ~~user~~ subscriber to access through the Internet, a WAP service unit 54 for enabling a ~~user~~ subscriber to access through the WAP-based wireless Internet, and an ARS unit 56 for enabling a ~~user~~ subscriber to access through the voice communications network. Functionally, the subscriber I/F server 50 includes a substitute ringback tone selection module 58 for enabling a user to select a substitute ringback tone, a presentation module 60 for enabling a user to present a substitute ringback tone to ~~another~~ a third person, and a sound DB 62 for storing various substitute ringback tone files ~~similarly~~ to the sound DB 32 of the play server 30.

[0027] The substitute ringback tone selection module 58 may ~~provides~~ a ~~"~~"listening trial"~~"~~ service by audibly ~~re~~producing a substitute ringback tone file in the sound DB 62 in response to a request ~~of~~ from a user. When ~~the user~~ a subscriber wishes to select or change the substitute ringback tone of his own, the substitute ringback tone selection module 58 provides a terminal identification code (e.g., a phone number) of the ~~user~~requesting subscriber and the code designated to~~of~~ the ~~selected~~ substitute ringback tone selected by the subscriber to the play control server 40, so that

the play control server 40 can stores ~~such~~ the received information. When the ~~user~~subscriber wishes to ~~present~~ provide a substitute ringback tone to a ~~nother~~third person, the presentation module 60 requests and receives the terminal identification code (e.g., the phone number) of the third person recipient, and temporarily stores the ~~phone number~~recipient's terminal identification code as well as ~~and~~ the code ~~of the selected~~designated to the substitute ringback tone selected by the subscriber, and then requests the third person recipient to confirm the receipt of the substituted ringback tone being provided to him ~~present~~ by ~~sending~~ returning a short message containing the callback URL of the system. When the ~~present~~ third party recipient connects and requests to set up the substitute ringback tone, the presentation module 60 ~~stores~~ provides the terminal identification code of the third party recipient and the code of the ~~selected~~ substitute ringback tone that has been presented to and received by the recipient to the play control server 40, so that the play control server 40 would stores ~~such~~the received information.

[0028] A fetch server 70 stores the substitute ringback tone code of the ~~called party~~receiver in response to the request of the ~~calling party~~caller. , ~~and~~The fetch server 70 includes a SMS unit 72, a WAP unit 74, and a ARS unit 76. A ~~user~~caller at the originating switch 10 who ~~feels like selecting~~wishes to choose the substitute ringback tone of the ~~called party~~receiver the caller has heard while placing a call to the receiver at the terminating switch 20 ~~while hearing the substitute ringback tone~~ can submit a fetch request by pressing a certain key or a combination of keys in ~~certain key input~~ sequence. The fetch request from the caller is transmitted to the play server 30 via the terminating switch 20, and the play server 30 transmits the terminal identification code

(e.g., the phone number) of the ~~calling party~~caller and the code designated to the substitute ringback tone ~~code of the called party~~heard by the caller to the fetch server 70, so that the fetch server 70 stores ~~such~~ the received information. Here, the fetch server 70 may request the ~~calling party~~caller to confirm the change of the substitute ringback tone by sending a short message containing the callback URL of the system. When the ~~calling party~~caller ~~connects and~~ requests ~~to set up the~~a substitute ringback tone as described above, the fetch server 70 then provides the caller's terminal identification code (e.g., the phone number) ~~of the calling party~~ and the code of the substitute ringback tone heard and ~~code of~~ requested by the ~~called party~~caller to the play control server 40 so that the play control server 40 stores the received information.

[0029] FIG. 2 shows a ~~first embodiment of the~~ method of setting the substitute ringback tone according to an embodiment of the present invention. ~~In the present embodiment, t~~The fetch server 70 ~~immediately~~ changes the caller's substitute ringback tone ~~of the calling party~~ to be identical ~~with~~to that of the ~~called party~~receiver's substitute ringback tone, which was heard by the caller, upon receiving the fetch request ~~of~~from the ~~calling party~~caller.

[0030] When the ~~calling party~~caller generates a call to a ~~called party~~receiver, who has subscribed to the substitute ringback tone service, the originating switch 10 requests the position information of the ~~called party~~caller's communication terminal (e.g., the mobile telephone) ~~to~~ from the HLR 12. The HLR 12 also requests a routing information ~~to~~ from the terminating switch 20 responsible for the ~~called party~~receiver's communication terminal (e.g., a mobile telephone), and the terminating switch 20 responds to the originating switch 10 by providing the ~~termination~~ position information

~~including~~ and the routing information of the receiver's terminal. The originating switch 10 tries a ISDN User Part (ISUP) call to the terminating switch 20 using the termination position information of the receiver. Subsequently, the terminating switch 20 acquires the service subscription information of the ~~called party~~receiver from the HLR 22 using the ~~called party~~receiver's terminal identification information, and determines whether the ~~called party~~receiver ~~is~~ has subscribed to the substitute ringback tone service (steps 100 and 101). If the ~~called party~~receiver ~~is~~ has not subscribed to the substitute ringback tone service, the terminating switch 20 provides a common or traditional ringback tone to the ~~calling party~~caller (step 102). If, however, it is determined that the ~~called party~~receiver ~~is~~ has subscribed to the service in the step 101, the terminating switch 20 suspends the call to the ~~called party~~receiver and routes the call to the play server 30.

[0031] In step 103, the play server 30 requests the substitute ringback tone code, which was previously selected and designated by the ~~called party~~receiver, ~~to~~from the play control server 40. The play control server 40 searches for the substitute ringback tone code of the ~~called party~~receiver from the substitute ringback tone ~~information~~ code DB 42 and provides the requested code ~~information~~ to the play server 30 (step 104). The play server 30 then reads out the substitute ringback tone file from the sound DB 32 using the code ~~information~~ and audibly reproduces the substitute ringback tone ~~to provide~~ to the ~~calling party~~caller at the originating switch 10 through the terminating switches 20 ~~and 10~~ (step 105).

[0032] Afterwards, the play server 30 checks for~~whether there is~~ any key input from the caller corresponding to ~~the~~a fetch request ~~from the calling party during~~ while the receiver's set ringback tone is ~~being~~ audibly played out for the caller (step 106). If

there is no fetch request key input, a call channel is then set up between the ~~calling party~~caller and the ~~called party~~receiver in a normal~~ly~~ manner, and then the call connection between the caller and the receiver is completed (step 107). If a play server 30 receives a fetch request ~~is received~~ from the ~~calling party~~caller, ~~however,~~ the fetch server 70 receives the caller's terminal identification code (e.g., the caller's phone number) ~~of the caller~~ from the terminating switch ~~30~~20 or the play server 30, and requests the service subscription information of the ~~calling party~~caller ~~to~~ from the COIS 44 to determine whether the ~~calling party~~caller ~~is~~ has also subscribed to the substitute ringback tone service (steps 108 and 109).

[0033] If it is determined that the ~~calling party~~caller is not a subscriber~~d to~~ of the substitute ringback tone service in the step 109, the fetch server 70 sends a short message containing the callback uniform resource locator (URL) of the system to the ~~calling party~~caller ~~for~~ advising the subscription status of the service (step 110). On the other hand, if it is determined that the ~~calling party~~caller ~~is~~ has subscribed to the substitute ringback tone service in the step 109, the fetch server 70 stores the caller's termination identification code (e.g., the caller's phone number) ~~of the calling party~~ and the code of the receiver's substitute ringback tone ~~code of the called party~~(which has been requested by the caller via a fetch request) ~~to~~ in the play control server 40. At this time, a certain reproduction condition may be stored along with the substitute ringback tone code. The reproduction condition may be a default condition under which a single substitute ringback tone designated by the ~~user~~ receiver is played regardless of the caller or the reproduction time. The reproduction condition, however, may include a reproduction time condition for limiting the time or duration of~~on which~~ the substitute

ringback tone ~~is~~being reproduced, and a reproduction target condition for limiting the callers to whom the substitute ringback tone is reproduced (step 111).

[0034] In step 112, the fetch server 70 notifies the completion of change of the substitute ringback tone by sending a short message containing some information stored in the play control server 40 to the ~~calling party~~caller (step 112).

[0035] FIG. 3 shows ~~a second embodiment of the~~ a method of setting substitute ringback tone according to a second embodiment of the present invention. In thise ~~present~~ embodiment, the fetch server 70 changes the substitute ringback tone of the ~~calling party~~caller to be identical ~~with~~to that of the ~~called party~~receiver after receiving a confirmation of the ~~calling party~~caller.

[0036] Steps 200-210 in FIG. 3 are similar to steps 100-110 in FIG. 2. That is, when ~~the calling party~~a caller generates a call to a ~~called party~~receiver who has subscribed to the substitute ringback tone service, the originating switch 10 acquires the position information of the ~~called party~~receiver's terminal (e.g., the telephone) from the HLR ~~12~~22, and tries a ISUP call to the terminating switch 20 using the termination position information. Subsequently, the terminating switch 20 acquires the service subscription information of the ~~called party~~receiver from the HLR 22, and determines whether the ~~called party~~receiver ~~is~~ has subscribed to the substitute ringback tone service (steps 200 and 201). If the ~~called party~~receiver ~~is~~ has not subscribed to the service, the terminating switch 20 provides a common or traditional ringback tone to the ~~calling party~~caller (step 202). If, however, it is determined that the ~~called party~~receiver ~~is~~ has subscribed to the service in the step 101, the terminating switch 20 suspends the call to the ~~called party~~receiver and routes the call to the play server 30.

[0037] In steps 203 and 204, the play server 30 acquires the substitute ringback tone code previously selected and designated by the ~~called party~~receiver from the play control server 40, and reads out the substitute ringback tone file from the sound DB 32 using the code information and audibly ~~r~~reproduces the substitute ringback tone ~~to provide to~~ the ~~calling party~~caller at the originating switch 10 through the terminating switch~~es~~ 20 ~~and 10~~ (step 205).

[0038] Afterwards, the play server 30 checks ~~whether there is~~for any key input from the caller corresponding to ~~the~~a fetch request ~~from the calling party during~~ while the receiver's substitute ringback tone is being played out for the caller (step 206). If there is no fetch request key input, a call channel is set up between the ~~calling party~~caller and the ~~called party~~receiver in a normal~~ly~~ manner, and then the call connection between the caller and the receiver is completed (step 207). If a fetch request is received from the ~~calling party~~caller, however, the fetch server 70 receives the caller's terminal identification code (e.g., the phone number) ~~of the caller~~ from the terminating switch ~~3~~20 or the play server 30, and requests the service subscription information of the ~~calling party~~caller ~~to~~ from the COIS 44 to determine whether the ~~calling party~~caller ~~is~~ has subscribed to the substitute ringback tone service (steps 208 and 209). If the ~~calling party~~caller ~~is~~ has not subscribed to the substitute ringback tone service in the step 209, the fetch server 70 sends a short message containing the callback URL of the system to the ~~calling party~~caller ~~for~~ advising the caller of the subscription status of the service (step 210).

[0039] On the other hand, if it is determined that the ~~calling party~~caller ~~is~~ has subscribed to the substitute ringback tone service in the step 209, the fetch server 70

sends a short message containing a callback URL and the tone code of the ~~called party~~receiver, so that the ~~calling party~~caller visits the user I/F server 50 after the completion of the call to request or confirm the change of the substitute ringback tone (step 211). If the caller's communication terminal is connected to the user I/F server 50 using the callback URL or through the ARS or the Internet, the user I/F server 50 provides the substitute ringback tone to the caller's communication terminal (step 213). If the caller selects the substitute ringback tone, the user I/F server 50 provides the phone number of the ~~calling party~~caller and the substitute ringback tone code of the ~~called party~~receiver to the play control server 40, so that the play control server 40 can ~~store~~s the received information (steps 214 and 215). At this time, reproduction conditions mentioned above may also be stored along with the substitute ringback tone code.

[0040] FIG. 4 shows ~~a third embodiment of the~~a method of setting substitute ringback tone according to a third embodiment of the present invention. According to ~~this present~~ embodiment, ~~the~~a requesting user can set ~~the~~his substitute ringback tone to be identical ~~with~~to that of another user by accessing the system at any time after the completion of a call.

[0041] First, the requesting user connects to the subscriber I/F server 50 through the WAP-based wireless Internet, for example, using the portable terminal. At this time, the requesting user may connect to the subscriber I/F server 50 by calling to the ARS subsystem or through the common Internet using another data terminal, as well (step 300). If the requesting user wishes to set the substitute ringback tone to be identical with that of another ~~person~~user, the requesting user requests the subscriber I/F server

50 to search substitute ringback tones of the another user~~person~~ by inputting the phone number of the another user~~person~~ (step 301). Upon receiving the search request, the subscriber I/F server 50 requests that the play control server 40 ~~to~~ perform the search. The play control server 40 searches the tone code information set for the phone number from the tone ~~information~~ code DB 42 and provides the search result to the subscriber I/F server 50. In case ~~that~~ a plurality of substitute ringback tones are set for playing under respective reproduction conditions such as target callers or the time, a list containing all the substitute ringback tone information is provided to the subscriber I/F server 50. The subscriber I/F server 50 displays to the requesting user the substitute ringback tone information from the play control server 40 in the order of the title of the tone or the name of the musician (step 302).

[0042] If the requesting user selects one of the ~~sound~~ substitute ringback tones in step 303, the subscriber I/F server 50 requests that the play control server 40 ~~to~~ check whether the requesting user ~~is~~ has subscribed to the substitute ringback tone service (step 304). The play control server 40 checks the service subscription information of the requesting user by referring to the information stored in the COIS 44, and provides the checking result to the subscriber I/F server 50. If the requesting user ~~is~~ has not subscribed to the substitute ringback tone service in the step 305, the subscriber I/F server 50 guides the subscription of the service to the requesting user, and the requesting user has the choice of ~~may~~ carrying out the subscription process ~~depending on the choice of the user~~ (step 306). On the other hand, if it is determined that the requesting user ~~is~~ has subscribed to the substitute ringback tone service in the step 305, the subscriber I/F server 50 provides the phone number of the requesting user and

the selected substitute ringback tone code to the play control server 40 so that the play control server 40 can stores the information (step 307). At this time, reproduction conditions mentioned above may also be stored along with the substitute ringback tone code.

[0043] FIG. 5 shows ~~a fourth embodiment of the~~ a method of setting a substitute ringback tone according to a fourth embodiment of the present invention. This~~e present~~ embodiment enables a requesting user to present a substitute ringback tone to another person (i.e., a recipient).

[0044] A requesting user of the service who wishes to present ~~the~~a substitute ringback tone to another person first connects to the subscriber I/F server 50 through the Internet or by calling to the ARS subsystem. After accessing the subscriber I/F server 50, the requesting user selects a `presentation` menu and specifies the intended recipient by inputting the phone number of the recipient (step 400). After receiving the presentation request, the subscriber I/F server 50 requests that the play control server 40 ~~to~~ check whether the intended recipient ~~is~~ has subscribed to the substitute ringback tone service (step 401).

[0045] The play control server 40 checks the service subscription information of the recipient by referring to the information stored in the COIS 44, and provides the checking result to the subscriber I/F server 50. If the recipient ~~is~~ has not subscribed to the substitute ringback tone service in step 402, the subscriber I/F server 50 provides a message that the service is not available for the recipient and completes the process (step 403).

[0046] On the other hand, if it is determined that the recipient ~~is~~ has subscribed to

the substitute ringback tone service in the step 402, the subscriber I/F server 50 ~~makes~~ allows the requesting user to search for a substitute ringback tone to ~~be~~ presented to the recipient, and provides a `listening trial` service for the requesting user by audibly ~~re~~producing the selected substitute ringback tone file ~~in response to the request of the user (step 404)~~. If the requesting user completes the selection of the substitute ringback tone to be presented to the recipient in step 405, the subscriber I/F server 50 temporarily stores the phone number of the recipient and the code of the selected substitute ringback tone, and sends a short message containing the callback URL, so that the recipient visits the subscriber I/F server 50 and confirms the use of the presented substitute ringback tone (steps 406 and 407).

[0047] If the recipient visits the user I/F server 50 using the callback URL, ~~or~~ through the ARS, or the Internet in the step 408, the user I/F server 50 provides the substitute ringback tone to the recipient and advises the method of confirming the receipt (step 409). If the recipient selects the substitute ringback tone, the user I/F server 50 provides the phone number of the recipient and the presented substitute ringback tone code to the play control server 40, so that the play control server 40 can ~~stores~~ the information (steps 410 and 411). At this time, reproduction conditions mentioned above may also be stored along with the substitute ringback tone code.

~~[0048] Although the present invention has been described in detail above, it should be understood that the foregoing description is illustrative and not restrictive. Those of ordinary skill in the art will appreciate that many obvious modifications can be made to the invention without departing from its spirit or essential characteristics. Thus, we claim all modifications and variation coming within the spirit and scope of the~~

~~following claims.~~

~~INDUSTRIAL APPLICABILITY~~

[00498] According to the present invention, when a ~~calling party~~caller ~~feels(wants to select)~~wishes to adopt the substitute ringback tone of the ~~called party~~receiver to be caller's own while the caller is hearing the substitute ringback tone of the ~~called party~~receiver, ~~the called party~~(the ~~calling party~~caller) can easily set ~~the~~ his substitute ringback tone ~~of his or her own~~ to be identical ~~with~~ to that of the ~~called party~~receiver. The ~~calling party~~caller submits the fetch request ~~just~~ merely by pressing a predetermined key input sequence, and the system changes the substitute ringback tone of the ~~called party~~caller immediately ~~or after obtaining the~~unless confirmation of the ~~called party~~receiver is necessary. Also, ~~the~~a subscribing user can access the system and set the substitute ringback tone of another user to be ~~identical with~~ that of his own. ~~another user or present a substitute ringback tone to a third party.~~

[~~00500~~0049] Accordingly, the ~~method of~~ present invention ~~can~~ enhances the satisfaction of the substitute ringback tone service users~~,~~ and may therby increase the revenue of the contents providers providing the services and ~~that of~~ the carrier operating the wireless communications network.

[0050] It will be clear that the present invention is well adapted to attain the ends and advantages mentioned as well as those inherent therein. While a various embodiments including the presently preferred one has been described for purposes of this disclosure, various changes and modifications may be made, which are well within the scope of the present invention. Numerous other changes may be made which will

readily suggest themselves to those skilled in the art and which are encompassed in the spirit of the invention disclosed and as defined in the appended claims.

Abstract

~~Method for~~ A caller may ~~setting~~ his telephone's substitute ringback tone ~~of calling party~~ to be identical ~~with~~ to that of the receiver or to that of a third ~~party~~called party. Further, a caller may provide a substitute ringback tone to another recipient as a present. A substitute ringback tone playing server ~~30~~ in the system checks whether there is a certain key input or key input stream from the ~~calling party~~caller requesting of bringing substitute ringback tone of the called party. Responding to the request, a bringing server ~~70~~ sets the substitute ringback tone code of the ~~calling party~~caller stored in a playing control server ~~40~~ as that of the called party. A user interface server ~~50~~ allows a user to select a substitute ringback tone among multiple tones stored in a database ~~62~~ to give to another person as a present.